

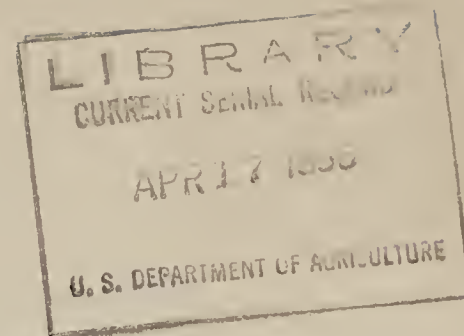
## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



A 335.8  
T23  
Cop 2

UNITED STATES DEPARTMENT OF AGRICULTURE  
Rural Electrification Administration  
Telephone Engineering Division



September 8, 1955  
Issue No. 9

Telephone Engineering Newsletter

Newsletters are intended to provide a means of answering questions that arise in the field and to advise the field of new developments. They are not intended to be instructions nor to replace in any respect the presently-approved channels for establishing requirements and procedures. Suggestions for subjects will be gladly received.

Line Wire Tie Abrasion Tests

The Bureau of Standards has begun tests on line wire tie abrasion tests. They have set up two separate spans each 100 feet long with an insulator at midpoint on each. It is expected that their reports will show the nature of abrasion resulting to tie wire, line wire and splints for various types of ties and frequency of vibration. The results should promptly indicate the most desirable method of tying line wire. These tests are particularly aimed at firming up design of pretied type splint so that widespread use can be considered.

One, Two and Three Pair Multipair Field Distribution Wire

As the result of requests from operating telephone companies for a multipair distribution wire of less than six pairs, manufacturers have produced one, two and three pair types and it is understood that a great quantity has been used by the industry. REA's Outside Plant Section is now preparing information on economical field of use, permissible span lengths, sags and tensions for these items of plant.

Impending Issues of TE & CM Sections

The following list of new sections, addenda and revisions to TE & CM sections will be issued shortly:

- Addendum 325 - Application Guide, Dial COE Requirements
- Addendum 431 - Voice Frequency Loading for Trunk Cables
- Revision 645 - Cable Plant Assembly Units

Telephone Engineering Newsletter, Issue No. 9, 9/8/55

Revision 702 - Booths and Special Fittings  
Revision 810 - Central Office Protection  
New 450 - Inductive Coordination - Telephone Circuit  
Noise Due to Induction from Electric Power  
Lines

Polyethylene Covered Line Wire Installations

Insulated line wire on both wires of a subscriber circuit about  $7\frac{1}{2}$  miles long has now been installed at Ellendale, North Dakota. Transmission tests are planned on this wire to obtain attenuation data on a circuit of this type. This circuit has both .080 copper-weld and .109 steel line wire in tandem.

The wire was installed with a novel design of insulated spiral splints using no pins, insulators or bolts. The method of attachment used comprises two polyvinyl insulated splints having bare shanks which are inserted through small holes bored vertically in the crossarms. They cross above the arm and support the line wire about one-half inch above the arm. Transpositions were made using a second set of similar splints with longer shanks which support the second wire an inch above the lower one.

The installation of insulated steel wire provided by the American Steel and Wire Company in the Lafourche (Louisiana) Telephone Company has not yet begun. This installation is to evaluate corrosion resistance of polyethylene coated line wire. The installation of the circuits with one bare and one covered wire which is underway at Ellendale, North Dakota, will be completed by Labor Day.

Collapsible Poles for Sag Checking

Sag checking poles are being procured for all field engineers. These have been redesigned since the small number was procured some months ago for experimental use. No delivery date has been set as yet.

Holzer-Cabot 15 Watt 5 Frequency Ringing Machines

Several trial installations of the Holzer-Cabot 15 watt ringing machines have been in use in the last year and a half. These trials have shown that the machines have design deficiencies. They are not recommended for further installations until these deficiencies have been corrected.

Telephone Engineering Newsletter, Issue No. 9, 9/8/55

### Traffic Studies

REA Staff Engineers are assembling equipment for use in borrowers' central offices for obtaining traffic information on equipment usage. This information is needed to increase REA's knowledge of traffic loads on various types of small CDO's used in REA borrowers' systems and to determine whether or not presently used traffic units need modification. The information obtained will include data on EAS, toll and local calling rates.

### 450 Foot Span Construction Using .109 Inch 190 Grade Insulated and Bare Steel Wire to be Tried in Kansas

The United Telephone Company, Dodge City, Kansas (Kansas 531), has agreed to use a type of rural line construction suggested by REA comprising one bare .109 inch 190 grade steel wire and one insulated with polyethylene 15 mils in thickness. This wire would permit average spans of 500 feet and maximum of 601 feet in the heavy loading area, but it has been recommended that the average spans on this project, which is in the heavy loading area, be 450 feet with 500 feet as the maximum. The saving in pole costs with spans of this length more than pays for the insulation of the wire even though poles one grade stronger and somewhat longer will be involved.



